Amendments to the Claims:

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) A method for selecting a modulation configuration in a multi-carrier modulation system that supports a plurality of modulation configuration, comprising step of:

for each modulation configuration *m*, determining a number of sub-carrier $k_m$ having a signal-to-noise ration above a predefined threshold $Y_m$; computing a number of useful sub-carriers $n_m$ by [~~dividing~~] processing $k_m$ [~~by~~] with a predefined ration $r_m$; constructing a sub-set of sub-carriers by selecting $n_m$ sub-carriers having ~~the highest~~ higher signal-to-noise ratio; and, computing a throughput $t_m$, by multiplying $n_m$, by a predefined capacity $c_m$ per sub carrier; and

selecting the modulation configuration having the highest throughput.

2. (Original) A method as claimed in claim 1, wherein the step of computing a number of useful sub-carriers further comprises a step of ensuring that the claim number of useful sub-carriers is an integer value not greater than n.

3. (Original) A method as claimed in claim 2 wherein the step of ensuring is performed using the equations: $n_m=\min(n, \text{floor}(k_m/r_m))$.

4. (Original) A method as claimed in claim 1, wherein the predefined threshold $Y_m$, is selected using empirical data derived from simulation results.

5. (Original) A method as claimed in claim 1, wherein the predefined ratio $r_m$ is selected using empirical data derived from simulation results.

6. (Original) A method as claimed in claim 5 wherein the ration $r_m$ is selected to leverage the corrective power of forward error correction associated with the modulation configuration.

7. (Original) An apparatus for selecting a modulation configuration, in a multi-carrier modulation system that supports a plurality of modulation configurations, comprising:

means for determining a number of sub-carriers $k_m$ having a signal-to-noise ratio above a predefined threshold $Y_m$, for each modulation configuration *m*;

means for computing a number of useful sub-carriers $n_m$ for each modulation configuration *m*, by dividing $k_m$ by a predefined ration $r_m$;

means for constructing a sub-set of sub-carrier by selecting $n_m$ sub-carriers having the highest signal-to-noise ratio for each modulation configuration *m*;

means for computing a throughput $t_m$, for each modulation configuration *m*, by multiplying $n_m$ by a predefined capacity $c_m$ per sub carrier; and

means for selecting the modulation configuration having the highest throughput.

8. (Original) An apparatus as claimed in claim 7, wherein the means for computing a number of useful sub-carriers further comprises means for ensuring that the number of useful sub-carriers is an integer value not greater than *n*.

9. (Currently Amended) A method for selecting sub-carriers in a modulation system, comprising steps of:

selecting a first sub-set of sub-carriers *k* having a signal-to-noise ration that exceeds a predetermined threshold;

[~~dividing~~] processing *k* [~~by~~] with a predetermined ratio *r* to derive a number of sub-carriers to include in a second, larger sub-set of sub-carriers;

selecting the second subset of sub-carriers by selecting n sub-carriers having a [~~highest~~] higher signal-to-noise ratio; and

using the *n* sub-carrier for data transmission in the modulation system, whereby the predetermined ratio *r* is selected to leverage the corrective capacity of a forward error correction used in the modulation system to improve data throughput.

10. (Currently Amended) A method as claimed in claim 9 wherein the modulation system is a multi-carrier modulation system that supports a plurality m of modulation configuration and the method further comprises steps of:

performing the steps of selecting the first sub-set, [~~dividing,~~] processing and selecting the second sub-set for each of the modulation configuration *m*;

computing a throughput $t_m$, for each modulation configuration *m*, by multiplying $n_m$ by a predefined capacity $c_m$ per sub-carrier or each second sub-set of sub-carriers; and

using the modulation configuration having the highest throughput.

11. (Currently Amended) A power network interface (PNI) for connecting an electronic device to a power line network, comprising:

a sub-carrier map selector adapted to receive a signal-to-noise ratio ($SNR_1$) for each of a plurality of sub carriers i, i=1, 2, …,n; to select a first sub-set of sub-carriers *k*; and, to [~~divided~~] process *k* by a predetermined ratio *r* to derive a second, larger sub-set n of sub carriers for use by the PNI for the transfer of data over the power line network, whereby *r* is selected to leverage the corrective capacity of forward error correction associated with a modulation configuration used by the PNI to transmit data over the power line network.

12. (Original) A power network interface as claimed in claim 11 wherein the sub-carrier map selector is further adapted to derive the second, larger sub-set *n* of sub-carriers for each of a plurality of modulation configurations *m* that may be used by the PNI to transfer data over the power line network

13. (Original) A power network interface as claimed in claim 11 wherein the sub-carrier map selector is further adapted to compute a throughput $t_m$, for each of the modulation configurations *m*, by multiplying $n_m$ by a predefined capacity $c_m$ per sub-carrier of each second sub-set of sub carriers *n*.

14. (Original) A power network interface as claimed in claim 13 wherein the sub-carrier map selector is further adapted to select one of the modulation configurations *m* having a highest throughput $t_m$ for use by the PNI for the transfer of data over the power line network.

15. (Original) A power network interface as claimed in claim 11 wherein the power line network is a home power line network.